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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Daniel Scott Engebretson

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11/03/2004

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EXAMINER

ROGERS, DAVID A

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/698,715	Applicant(s) ENGEBRETSON, DANIEL SCOTT	
	Examiner David A. Rogers	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 20 is/are allowed.
- 6) ☐ Claim(s) 1-4 and 6-18 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities.

Page 1, paragraph 0001: replace --2003-- with --2002--.

Page 1, paragraph 0001: replace --is-- with --are--.

Page 3, paragraph 0008: replace --teflon-- with --TEFLON--.

Page 22, paragraph 0071, line 3: replace --FIG. 2-- with --FIG. 3--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 7-10, and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 3,830,106 to Gardiner *et al.*

Gardiner *et al.* discloses a sampling device (see figure 1) comprising a tube (reference item 1), a chamber (the chamber being the interior of the semi-permeable membrane (reference item 3)), a first channel (reference item 9), and a second channel (reference item 10). The first channel is in communication with the second channel via the chamber. The tube acts as a protective layer to protect the first and second channels. A carrier fluid is introduced to the

first channel using a pump and withdrawn via the second channel. The semi-permeable membrane is permeable to the analyte of interest.

Gardiner *et al.* further discloses that the device can provide a continuous sample which can then be analyzed. It is also disclosed that continuous measurements can be performed. In either case the device would need a sample collector to take samples to an off-line analyzer or an in-line analyzer for performing the continuous measurements.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardiner *et al.* as applied to claim 1 above, and further in view of United States Patent 5,582,794 to Hagiwara *et al.*

Gardiner *et al.* teaches a sampling device comprising a semi-membrane. The semi-membrane is taught as being a preferred hydrophobic membrane for dissolved gases. The disclosed membrane is Teflon. Gardiner *et al.* does not expressly teach the use of a silicone semi-permeable membrane.

Hagiwara *et al.* teaches that it is known in the art of gas exchange that silicone semi-permeable membranes are hydrophobic. The choice of Teflon or

silicone as the preferred semi-permeable membrane is a matter of design choice since both are used in gas exchange and are hydrophobic.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gardiner *et al.* with the teachings of Hagiwara *et al.* in order to provide a silicone semi-permeable membrane on a sampling device.

6. Claim 12 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gardiner *et al.*

Gardiner *et al.* teaches a sampling probe comprising a semi-permeable membrane for analyzing components in a working fluid. Gardiner *et al.* further teaches that it is known to use the probe in tanks, baths, or other containers in an industrial process (column 2, lines 54-56). The use of one or more probes as an “array” would have been anticipated or otherwise obvious in the use of the device of Gardiner *et al.* since it is commonly known that industrial processes general have a plurality of tanks, baths or other containers. Using a sampling probe for each tank, bath or container would allow for the analysis of the components in the working fluid in each tank, bath, or container.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the express teachings of Gardiner *et al.* to provide an array of sampling probes in an industrial process.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardiner *et al.* as applied to claim 1 above, and further in view of United States Patent 5,334,189 to Wade.

Gardiner *et al.* teaches a sampling probe comprising a semi-permeable membrane for analyzing components in a working fluid. Gardiner *et al.* further teaches that it is known to use the probe in tanks, baths, or other containers in an industrial process (column 2, lines 54-56). Gardiner *et al.* does not teach the use of a protective shell around the chamber/membrane.

Wade teaches a diffusion apparatus, as seen in figures 1-3. The apparatus comprises a semi-permeable membrane (reference item 18) and an external impermeable shell (reference item 16). The impermeable shell comprises a plurality of ports (reference item 14). The impermeable shell acts to protect the membrane from damage (column 6, lines 54-64).

Adapting the sampling apparatus of Gardiner *et al.* to comprise a protective shell, as taught by Wade, would ensure that the semi-permeable membrane was protected when used in industrial tanks, baths, or other containers.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Gardiner *et al.* with the teachings of Wade to provide a protective shell on a sampling device comprising a semi-permeable membrane.

8. Claims 1-3, 6, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 5,889,217 to Rossabi *et al.* in view of United States Patent 5,465,628 to Timmons, "Field Tests of Diffusion Samplers for Inorganic Constituents in Wells and at a Ground-Water-Discharge Zone" to Vroblesky *et al.* and United States Patent 5,334,189 to Wade.

Rossabi *et al.* teaches a sampling device comprising a tip (reference item 2), a chamber (reference item 33), a first channel (reference item 71), a second channel (reference item 73), and filters (reference items 17 and 25). The filter (reference item 25) is a semi-permeable member defining at least one wall of the chamber. Fluid in the chamber is withdrawn using the first and second channels. The device of Rossabi *et al.* comprises an array of sampling locations spaced vertically.

Note that providing a plurality of individual sampling probes spaced apart in a horizontal direction, i.e. individual probes located around a region of interest, would have been an obvious use of the device of Rossabi *et al.* This would allow the characterization of contamination across a field zone. See Vroblesky *et al.*

In the event that Rossabi *et al.* does not teach a "semi-permeable member", Timmons does teach a sampling device using a filter (reference item 5). The filter is a semi-permeable member, such as formed of ceramic, stainless steel, and Teflon in order to provide transmission of gasses and not other matter. It would have been obvious to one of ordinary skill in the art at

the time of the invention to modify the teachings of Rossabi *et al.* with the teachings of Timmons to provide the filter as a semi-permeable member such as Teflon in order to allow the selective transfer of gasses for analysis.

Furthermore, Wade teaches a diffusion apparatus, as seen in figures 1-3. The apparatus comprises a semi-permeable membrane (reference item 18) and an external impermeable shell (reference item 16). The impermeable shell comprises a plurality of ports (reference item 14). The impermeable shell acts to protect the membrane from damage (column 6, lines 54-64).

Adding a protective shell, as taught by Wade, to the exterior of the device of Rossabi *et al.* would allow the protection of the filters from damage during insertion of the device into the earth.

Allowable Subject Matter

9. Claims 19 and 20 are allowed.
10. Claims 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Rogers whose telephone number is (571) 272-2205. The examiner can normally be reached on Monday - Friday (0730 - 1600).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


dar
01 November 2004


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